

## **REMARKS**

The Applicant has now had an opportunity to carefully consider the comments set forth in the Office Action mailed January 4, 2007. The withdrawal of the objection to claims 1, 17, 20 and 21 and the consideration given the amendments and remarks of the Applicant, which were presented in the paper received in the Office on October 20, 2006, are noted with appreciation. Nevertheless, the rejections of claims 1-22 based on new grounds are respectfully traversed. Reconsideration of the application is hereby respectfully requested.

### **The Office Action**

In the Office Action mailed January 4, 2007:

**claims 1-22** were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,215,498 to Filo, et al. ("Filo") and further in view of U.S. Patent No. 6,711,147 to Barnes, et al. ("Barnes").

### **The Present Application**

By way of brief review, the present application is directed toward virtual reality systems and methods that provide for the collection, transmission and incorporation of real time data regarding at least one actual physical environment. Additionally, the systems and methods of the present application are directed toward allowing system users or subscribers to move over wide geographical areas while participating in a virtual reality episode. Accordingly, as recited, for example, in **claim 1**, the present application describes virtual reality user equipment (VUE) that is operative to capture and transmit **real world video** and audio data and to display received virtual reality data representing an actual physical environment.

To provide for wide geographic mobility, interconnectedness and subscription services, the present application describes a virtual reality core system (VCS) which, for example, as recited in **claim 1**, is able to communicate with at least two virtual reality environment subscriber databases (VSD), one of which has a relatively local location and at least one of which has a relatively remote location. Additionally, the VCS can be in wireless communication with the user equipment (VUE). The core system is operative to access the relatively local VSD to retrieve subscription information of the VUE, if the core system is a home core system of the VUE, and to access at least one

of the at least one relatively remotely located VSD to retrieve the subscription information if the core system is a visited virtual reality core system of the VUE.

In order to facilitate virtual reality episodes, the present application describes a virtual reality episode management entity (VEME) which, as recited in, for example, **claim 1**, is in communication with the at least one virtual reality core system and is operative to forward the virtual reality data representing the environment to the at least one VUE and receive the **real world video** and audio data from the at least one VUE.

As recited, for example, in **claim 6**, embodiments can include a virtual reality environment access system (VAS), which facilitates the wireless communication of the at least one virtual reality environment user equipment (VUE) with the at least one virtual reality environment core system (VCS). As recited in **claim 16**, a respective VAS relays messages between the VUE and the at least one VCS. Responsibility for providing connectivity can be handed off from the first respective VCS to a second respective VCS if a respective VUE moves out of a first geographic region served by the first VCS into a second geographic region that is served by the second respective VCS.

Also, as recited, for example, in **claim 16**, a VEME may forward real time virtual reality data representative of an actual physical environment to at least one VUE through wireless connectivity services of the respective VAS currently serving the VUE based on mobile link information maintained by the VEME.

It is respectfully submitted that Filo, even in light of Barnes, does not disclose or suggest the methods, systems or architecture for providing users or subscribers with the virtual reality episode participation capabilities disclosed in the present application and recited in the claims.

### **The Cited References**

For example, the primary reference of the Office Action to Filo allegedly discusses a virtual command post (title). The virtual command post is generated in a system of networked terminal apparatus for creating a three-dimensional **animated** work environment wherein terminal users of various levels of immersion are depicted as **avatars** in the **virtual work environment** and wherein actions and information of the terminal users is input into the virtual work environment through their corresponding avatars in order to perform complementary, independent and cooperative tasks in parallel to create simultaneous sets of solutions to problems relating to command,

control, communications, cognition and intelligence. In a preferred embodiment, the virtual work environment **emulates** an actual military command post, with all of the instruments and familiar surroundings **emulated** in function, **if not in form**.

It is respectfully submitted that Filo does not disclose or suggest the system elements or architecture that is discussed in the present application and recited in the claims. For example, it is respectfully submitted that Filo does not disclose or suggest virtual reality user equipment that is operative to capture and transmit **real world video** data. Furthermore, Filo does not disclose or suggest virtual reality user equipment that is operative to receive virtual reality data representing **an actual physical environment**.

Even though Filo mentions an --actual military command post--, it is respectfully submitted that such references indicate that the virtual work environment of Filo **emulates** (i.e., imitates) a command post and not that virtual reality user equipment receives data representing an actual physical environment. Further in this regard, Filo indicates that --since **the virtual command post (VCP) exists as software and data on a network**, there is no physical or logistical demands placed on the commander or staff to transport, erect and configure tons of equipment. This saves time in critical operations, such as landing or short ground wars. The VCP **is a simulation** of an actual command post (column 2, lines 45-55). Accordingly, it is respectfully submitted that Filo does not disclose or suggest virtual reality user equipment that is operative to receive virtual reality data representing an actual physical place or environment.

Filo mentions inputs (microphone, body encoders and pointing devices) connected to individual personal computers (e.g., column 2, lines 59-61). However, it is respectfully submitted that Filo does not disclose or suggest virtual reality user equipment that is operative to capture and transmit **real world video data**.

Furthermore, Filo does not disclose or suggest a virtual reality core system or a **virtual reality environment subscriber database**. In support of assertions to the contrary, the Office Action cites column 6, lines 33-52, of Filo. However, **the Office Action does not identify a system element of Filo** that the Office considers to be analogous to the **virtual reality environment core system** recited in the claims of the present application. Furthermore, **the Office Action does not identify an element of the system of Filo** that the Office considers to be analogous to **at least two virtual reality environment subscriber databases**, one having a relatively local location and another having a relatively remote location. The cited portion of Filo indicates that a local VCP

10 may be linked to other networks and that the other networks may comprise other remote VCPs or video and audio communication data streams. However, it is respectfully submitted that Filo does not disclose or suggest that a **virtual reality environment core system** having the characteristics recited in the claims of the present application or that **virtual reality environment subscriber databases** are in any way associated with the network connections.

Additionally, it is respectfully submitted that Filo does not disclose or suggest a **virtual reality environment episode manager (VEME)** which is in communication with at least one virtual reality core system and is operative to forward the virtual reality data representing the environment to the at least one VUE and receive the real world video and audio data from the at least one VUE, thereby facilitating a virtual reality episode. In support of the assertion to the contrary, the Office Action again directs the attention of the Applicant to column 6, lines 33-52. However, it is respectfully submitted that the cited portion does not disclose or suggest a virtual reality environment episode manager VEME. Indeed, it is respectfully submitted that the cited portion discusses a local VCP and subordinate VCPs. Since the Office Action cites column 6, lines 33-52, in support of assertions related to a virtual reality core system (VCS), at least two virtual reality subscriber databases (VSD) and a virtual reality episode manager (VEME), it appears that the Office considers the VCP of Filo to be analogous to each of the VCS, VSD and VEME of the present application. Clarification and citations to portions of Filo that indicate that the VCP performs the recited functions of each of these elements is respectfully requested.

In any event, it is respectfully submitted that, Filo does not disclose or suggest a VEME, or any element operative to receive real world video data (as is recited, for example, in claim 1) or data representative of an actual physical environment (as is recited in, for example, claims 9 and 16). Filo mentions that the "other networks" may comprise other remote VCPs or video and audio communication data streams. However, Filo does not indicate that said video data streams include real world video data or data representative of an actual physical environment.

It is respectfully submitted that Barnes does not cure these deficiencies of Filo.

For example, Barnes is not concerned with providing a virtual reality environment and does not disclose or suggest virtual reality user equipment that is operative to capture virtual reality data. Moreover, Barnes does not disclose or suggest virtual

reality user equipment that is operative to capture and transmit real world video and audio data as recited, for example, in **claim 1** of the present application.

Instead, Barnes is concerned with a merged packet service and mobile internet protocol (title). The Office Action relies on Barnes for disclosure of a core system being operative to access at least one of the at least one relatively remotely located virtual reality environment subscriber databases (VSD) to retrieve respective subscription information of the at least one virtual reality user equipment (VUE) if the core system is a visited virtual reality core system relative to the at least one VUE and cites column 12, line 55 - column 13, line 1, for this purpose.

However, the cited portion of Barnes does not disclose or suggest a system related to virtual reality. Additionally, the cited portion does not disclose or suggest a core system being operative to access at least one relatively remotely located virtual reality subscriber database. Even if the HLR database is fairly construed as a subscriber database, it is respectfully submitted that the HLR of Barnes is not fairly construed as a virtual reality subscriber database. Moreover, the Office Action stipulates that Filo does not teach differentiating between local and remote subscription information databases. It is respectfully submitted that the cited portion of Barnes only refers to one (the) HLR database (see column 12, line 53).

Additionally, it is respectfully submitted that there is no motivation to combine subject matter disclosed by Filo and subject matter disclosed by Barnes other than a motivation that could only have been gleaned from the present application. It is respectfully submitted that the motivation suggested by the Office Action, --in order to allow a mobile node to seamlessly roam between networks--, is specious. Roaming between networks is a goal allegedly satisfied by Barnes alone (column 12, lines 55-60). Accordingly, there is no motivation to combine Barnes with Filo in order to achieve this goal. Therefore, the Office has not met its burden of presenting a *prima facie* case of obviousness and the rejections of **claims 1-22** are based on impermissible hindsight reasoning.

### **The Claims are not Obvious**

**Claims 1-22** were rejected under 35 U.S.C. 103(a) as being unpatentable over Filo in view of Barnes.

However, regarding **claim 1**, it is respectfully submitted that Filo and Barnes do

not disclose or suggest virtual reality user equipment (VUE) that is operative to capture and transmit real world video data or to display virtual reality data representing an actual physical environment.

Additionally, Filo and Barnes do not disclose or suggest a virtual reality environment core system (VCS) as is recited, for example, in **claim 1**.

For example, in support of the contrary assertions relative to the virtual reality user equipment, the Office Action directs the attention of the Applicant to column 7, lines 26-30; column 3, lines 2-37; and column 6, line 63 - column 7, line 12. The cited portion of column 7 indicates that an executive user is provided with a radio and modem that is linked to a wearable computer and that is effective to transmit updated changes in voice and position data via the network to personal computers of all other users in attendance. It is respectfully submitted that the cited portion of column 7 does not disclose or suggest a VUE that is operative to capture and transmit real world video data. The cited portion of column 3 indicates that the computer terminal apparatus for the executive level participant includes: a wearable computer that is preferably worn on the belt of the user, display means for displaying the virtual work environment and for displaying in the virtual work environment, animated characters or avatars representing other immersed users in attendance in the virtual work environment and for displaying functional objects in the virtual working environment. The cited portion also indicates that this equipment includes position tracking means for correlating changes in hand and head movements of the executive level user to the executive level user's assigned avatar in the virtual work environment, audio input/output means for transmitting and receiving voice data to and from the virtual work environment. However, the cited portion of column 3 does not disclose or suggest virtual reality user equipment that is operative to capture and transmit real world video data.

The cited portions of columns 6 and 7 indicate that "virtual reality gear provided to the executive level user includes a head mounted display ("HMD") 32 that provides a video stream to the eyes. This video stream provides a three-dimensional image that allows the executive level user to think that he is in the virtual world as it would really exist. Also provided is a boom-mounted microphone 34 for projecting voice data into the virtual environment and headphones 36 for hearing other users talking inside the virtual environment. A head tracker 38 tracks motion of the head as the executive level user 30A looks from side to side and up and down. Visual and audio data transmission

to and from the HMD 32, microphone 34 and headphones 36 is carried over cord 40 connected to a wearable personal computer 42.” It is respectfully submitted that Filo does not disclose or suggest that the virtual reality gear provided to the executive level user includes a device for capturing real world video data.

Accordingly, for at least the foregoing reasons, **claim 1**, as well as **claims 2-8**, which depend therefrom, is not anticipated and is not obvious in light of Filo and Barnes.

Additionally, in support of the assertion that Filo discloses at least one virtual reality core system (VCS), such as the VCS recited in **claim 1**, the Office Action directs the attention of the Applicant to column 6, lines 33-52 and 22-27, as well as column 10, lines 35-51. However, column 6, lines 33-52, discuss a virtual command post and its interaction with subordinate virtual command posts. While the cited portion includes the word --local-- and --remote--, it is respectfully submitted that the cited portion of Filo does not disclose or suggest at least one virtual reality core system, wherein the core system is in communication with at least two virtual reality environment subscriber databases (VSD), one of which has a relatively local location and at least one of which has a relatively remote location as asserted by the Office Action. It is respectfully submitted that the virtual command posts (reference numerals 10, 24, 26 and 28 (which are depicted as tents in FIG. 1 of Filo)) are not, and do not, in any way disclose or suggest virtual reality environments subscriber databases as recited in **claim 1**.

Column 6, lines 22-27, indicates that “each of the VCP participants 12, 14, 16 and 18 are radio linked to one another.” In addition, each VCP participant 12, 14, 16 and 18 is represented by a respective animated character or avatar 12A, 14A, 16A and 18A inside the VCP 10. It is respectfully submitted that Filo does not disclose or suggest a virtual reality core system (VCS) being in wireless communication with at least one VUE as recited in **claim 1**. Accordingly, it is respectfully submitted that the virtual command post 10 of Filo is not fairly construed to be analogous to a virtual reality core system as recited in claim 1 of the present application. However, even if it were, Filo does not disclose or suggest that the virtual command post is in wireless communication with at least one virtual reality user equipment. The users of the system are in radio communication with one another. Filo does not disclose that users are in wireless communication with a VCS or even with the VCP of Filo.

The cited portion of column 10 indicates that when a user immerses into the VCP

environment, there is an initial identification process that takes place. However, the cited portion does not disclose or suggest a virtual reality environment core system being operative to access a relatively local subscriber database to retrieve subscription information of the at least one VUE if the core system is a respective home core system of the at least one VUE and to access at least one of the at least one relatively remotely located virtual reality environment subscriber databases (VSD) to retrieve respective subscription information of the at least one VUE if the core system is a visited virtual reality core system relative to the at least one VUE. The cited portion of column 10 does not disclose or suggest a database of any kind. Moreover, the cited portion of column 10 does not disclose or suggest subscribers or subscriber databases. Furthermore, the cited portion of column 10 does not disclose or suggest virtual reality environment subscriber databases.

It is respectfully submitted that Barnes does not cure these deficiencies.

Accordingly, for at least the foregoing additional reasons, **claim 1**, as well as **claims 2-8**, which depend therefrom are not anticipated and are not obvious in light of Filo and Barnes.

Further in regard to **claim 1**, the Office Action stipulates that Filo does not disclose differentiating between local and remote subscription information databases and relies on Barnes for this disclosure. However, the cited portion of Barnes, column 12, line 55 - column 13, line 1, does not mention a local or remote subscription information database. Additionally, the cited portion of Barnes does not disclose or suggest a subscription database or even a database of any kind. Moreover, the cited portion of Barnes does not disclose or suggest local and/or remote virtual reality environment subscription databases.

Furthermore, it is respectfully submitted that there is no motivation to combine subject matter disclosed by Filo and subject matter disclosed by Barnes other than a motivation that could only have been gleaned from the present application. It is respectfully submitted that the motivation suggested by the Office Action, --in order to allow a mobile node to seamlessly roam between networks--, is specious. Roaming between networks is a goal allegedly satisfied by Barnes alone (column 12, lines 55-60). Accordingly, there is no motivation to combine Barnes with Filo in order to achieve this goal. Therefore, the Office has not met its burden of presenting a *prima facie* case of obviousness and the rejections of **claim 1**, as well as **claims 2-8**, which depend



therefrom, are based on impermissible hindsight reasoning.

With regard to **claim 6**, the Office Action again directs the attention of the Applicant to column 6, lines 22-27, and asserts that Filo discloses the invention described in **claim 1**, including a virtual reality system comprising a virtual reality environment access system (VAS) wherein the virtual reality environment access system facilitates the wireless communication of the at least one virtual reality environment user equipment with the at least one virtual reality environment core system. However, the cited portion of column 6 indicates that VCP participants are radio linked to one another. The cited portion does not disclose or suggest that VCP participants or virtual reality user equipment, as recited in **claim 1**, is in wireless communication with a virtual reality core system or even with the virtual command post of Filo, which exists as software and data on a network (column 2, line 49).

For at least the foregoing additional reason, **claim 6** is not anticipated and is not obvious in light of Filo and Barnes.

With regard to **claim 7**, the Office Action again directs the attention of the Applicants to column 10, lines 35-51. However, the cited portion discusses an initial identification process and does not disclose or suggest a subscriber database, a virtual reality entity subscription database or a virtual reality core system comprising a virtual reality entity subscription database.

For at least the foregoing additional reasons, **claim 7** is not anticipated and is not obvious and light of Filo and Barnes.

The Office Action asserts that Filo discloses most of the elements of independent **claim 9** and that Barnes discloses an element not disclosed by Filo. However, the Applicant respectfully disagrees. Among the elements of **claim 9** that are not disclosed or suggest by even the combination of Filo and Barnes are: accessing a relatively local virtual reality environment subscriber database under a first circumstance and accessing a relatively remote VSD under a second circumstance (see claim for complete claim language), receiving real time virtual reality data at a virtual reality environment episode management entity (VEME), wherein the virtual reality data is representative of an actual physical environment, determining at a VRE episode management entity that the virtual reality data is associated with the requested virtual reality episode and forwarding, based on the access subscription information, at least a portion of the virtual reality data to the VUE, wherein the VRE user equipment is in

wireless communication with the VRE episode management entity VEME, and wherein the VRE user equipment (VUE) is operative to capture, transmit and display virtual reality data.

With regard to the local and remote VSD, the Office Action directs the attention of the Applicant to column 10, lines 35-51, of Filo and to column 12, line 55 - column 13, line 1, of Barnes in an effort to remedy the deficiencies of Filo to which the Office Action stipulates. However, the cited portion of Filo (column 10, lines 35-51) only discuss an initial identification process and do not disclose or suggest that either a local or remote virtual reality environment subscriber database is accessed. While the cited portion indicates that the user is identified by some characteristic unique to the individual and lists devices that may be used to “identified” some unique characteristic of a user, the cited portion does not indicate that a database is accessed or that a local database is accessed if an entity receiving the request is a respective home virtual reality core system of the VUE and that a remote database is accessed if the entity receiving the request is a visited virtual reality core system relative to the VUE. It is respectfully submitted that any reading of Filo as suggesting such an architecture is based on information gleaned only from the present application and accordingly represents impermissible hindsight reasoning. Additionally, the cited portion of Barnes (column 12, line 55 - column 13, line 1) outlines steps involved when a mobile node 12, which has just roamed to the location D from the location F, sends a mobile IP registration request message to a foreign agent. However, it is respectfully submitted that the cited portion is silent with regard to subscriber databases. Furthermore, the cited portion is silent with regard to remote and local subscriber databases. Moreover, the cited portion is silent with regard to local and remote virtual reality environment subscriber databases.

For at least the foregoing reasons, **claim 9**, as well as **claims 10-15**, which depend therefrom, is not anticipated and is not obvious and light of Filo and Barnes.

With regard to receiving real time virtual reality data at a VEME, wherein the virtual reality data is representative of an actual physical environment, the Office Action directs the attention of the Applicant to column 3, lines 60-67, and column 2, lines 45-61, of Filo. However, the cited portion of column 3 indicates that avatars in the virtual work environment can view the “in progress” work of the staff level user in real time by simply “clicking on” the displayed functional objects (i.e., seated avatar or icon) representing that particular staff level user. This information can be projected on a

virtual screen display or video wall for viewing by all the other avatars in the virtual work environment. The cited portion of column 2 indicates that the virtual reality environment proposed by Filo emulates today's physical military command post, referred to herein as the virtual command post ("VCP"). And that the VCP exists as software and data on a network so that there is **no physical** or logistical demands placed on the commander or staff to transport, erect, and configure tons of equipment.

Accordingly, it is respectfully submitted that the virtual reality environment of Filo is entirely virtual. Accordingly, no portion of the system of Filo receives real time virtual reality data wherein the virtual reality data is representative of an actual physical environment. It is respectfully submitted that the reference to emulating today's physical military command post is a reference to imitating a typical command post and does not disclose or suggest receiving real time virtual reality data representing an actual physical location or environment. Indeed, it is respectfully submitted that **Filo teaches away from an actual physical environment** by indicating that with the system of Filo there is no physical or logistical demands placed on the commander or staff to transport, erect and configure tons of equipment, thereby saving time and critical operations such as landing or short ground wars (column 2, lines 50-53).

For at least the foregoing additional reasons, **claim 9**, as well as **claims 10-15**, which depend therefrom, is not anticipated and is not obvious in light of Filo and Barnes.

With regard to determining, at a VRE episode management entity, that the virtual reality data is associated with the requested virtual reality episode, the Office Action provides no specific citation. Instead, in an apparent acknowledgement that Filo does not disclose or suggest this element, the Office Action combines this element with forwarding, based on the accessed subscription information, at least a portion of the virtual reality data to the VUE and directs the attention of the Applicant to column 6, lines 33-52. However, the cited portion is silent with regard to determining that virtual reality data is associated with a requested episode. It is respectfully submitted that Filo does not disclose or suggest such a step because the architecture identified by Filo is fundamentally different from that recited in claim 9. For example, it is respectfully submitted that the virtual command posts discussed in the cited portion of Filo are not fairly construed as virtual reality episode management entities such as those recited in **claim 9**. For instance, the VCPs of Filo are concerned only with the simulation or

emulation they are part of (i.e., only one episode). Accordingly, there is no need to determine whether or not data received via VCP is associated with a requested virtual reality episode. It is respectfully submitted that all of the data received by any of the VCP of Filo is associated with the emulation that VCP is associated with. Therefore, there is no need or suggestion to make a determination.

This is not the case for virtual reality data received at a virtual reality episode management entity of the present application. For example, the VEME recited in **claim 9** may receive respective virtual reality data that is associated with a plurality of respective virtual reality episodes. Accordingly, the VEME recited in **claim 9** makes a determination regarding whether or not the data received is associated with the particular virtual reality episode recited in **claim 9** or with some other virtual reality episode.

For at least the foregoing additional reasons, it is respectfully submitted that **claim 9** is not anticipated and is not obvious in light of Filo and Barnes.

With regard to the VRE user equipment being in wireless communication with the VEME, the Office Action directs the attention of the Applicant to column 6, lines 22-27. However, as indicated above, the cited portion indicates that each of the VCP participants are radio linked to one another. Filo does not disclose or suggest that a VEME or even the VCP of Filo is in wireless communication with virtual reality episode user equipment.

For at least the foregoing additional reasons, **claim 9** is not anticipated and is not obvious in light of Filo and Barnes.

It is respectfully submitted that there is no motivation to combine subject matter disclosed by Filo and subject matter disclosed by Barnes other than a motivation that could only have been gleaned from the present application. It is respectfully submitted that the motivation suggested by the Office Action, --in order to allow a mobile node to seamlessly roam between networks--, is specious. Roaming between networks is a goal allegedly satisfied by Barnes alone (column 12, lines 55-60). Accordingly, there is no motivation to combine Barnes with Filo in order to achieve this goal. Additionally, Filo teaches away from mobility or transport as being associated with problematic logistical demands (column 2, lines 49-54). Therefore, the Office has not met its burden of presenting a *prima facie* case of obviousness and the rejections of **claim 9**, as well as **claims 10-15**, which depend therefrom, are based on impermissible hindsight

reasoning.

Regarding **claim 11**, the Office Action directs the attention of the Applicant to column 3, lines 2-37, and column 6, line 63 - column 7, line 12. However, the cited portion of column 3 indicates that the computer terminal apparatus for the executive level participant includes *inter alia*: audio input/output means for transmitting and receiving voice data to and from the virtual work environment (column 3, lines 19-21). It is respectfully submitted that voice data is associated with a user and is not fairly construed to disclose or suggest capturing real time audio associated with the actual physical environment as recited in **claim 11**.

For at least the foregoing additional reason, **claim 11** is not anticipated and is not obvious in light of Filo and Barnes.

With regard to **claim 12**, the Office Action cites column 2, lines 45-61, and column 6, lines 10-27, of Filo. However, as indicated above, the cited portion indicates that the virtual reality environment of Filo emulates (or imitates) today's physical military command post. It is respectfully submitted that the cited portion of column 2 does not disclose or suggest capturing in real time a virtual reality data comprises capturing real time virtual reality data representative of an actual physical environment. The cited portion of column 6 indicates that a VCP in accordance with one embodiment of the invention of Filo allows remote and dispersed command staff to meet instantly, without delay due to travel, for missions, planning, training and rehearsals. However, the cited portion does not disclose or suggest capturing in real time a virtual reality data representing an actual physical environment located geographically distant from the VRE user equipment as recited in **claim 12**.

For at least the foregoing additional reasons, **claim 12** is not anticipated and is not obvious in light of Filo and Barnes.

With regard to **claim 13**, the Office Action cites column 10, lines 35-51, of Filo. However, the cited portion of Filo is directed toward identifying a user and does not disclose or suggest identifying VRE user equipment as participating in a particular virtual reality episode prior to forwarding at least the portion of the virtual reality data to the VRE user equipment as recited in **claim 13**.

For at least the foregoing additional reasons, **claim 13** is not anticipated and is not obvious in light of Filo and Barnes.

With regard to **claim 14**, the Office Action again directs the attention of the

Applicant to column 10, lines 35-51. However, the cited portion discusses identification of a user and does not disclose or suggest determining a location of VRE user equipment prior to forwarding at least a portion of the virtual reality data to the VRE user equipment. Clarification is respectfully requested.

For at least the foregoing reasons, **claim 14** is not anticipated and is not obvious in light of Filo and Barnes.

With regard to **claim 15**, the Office Action again cites column 10, lines 35-51, and asserts that Filo discloses the invention described in **claim 9** wherein determining the location of the VRE user equipment comprises querying a database for a location of the VRE user equipment. However, the cited portion of Filo is silent with regard to databases. The cited portion of Filo is silent with regard to querying a database for location information regarding VRE user equipment. The cited portion indicates that once a user is identified, the user is allowed to access files and information for which he is authorized. However, this does not disclose or suggest querying a database to determine a location of VRE user equipment. It is respectfully submitted that the user of Filo is likely to know where the user of Filo is. Accordingly, a user of the system would not have to query a database to determine his or her location.

For at least the foregoing additional reasons, **claim 15** is not anticipated and is not obvious in light of Filo and Barnes.

With regard to independent **claim 16**, the Office Action relies on column 6, lines 22-27, of Filo in support of the assertion that Filo discloses a plurality of virtual reality environment access systems (VAS), where each VAS of the plurality provides wireless connectivity for respective ones of the at least one VUE. However, it is unclear which element discussed in the cited portion of Filo the Office Action considers to be analogous to a VAS system. Moreover, it is unclear which elements discussed in the cited portion the Office Action considers to be analogous to a plurality of virtual reality access systems. Since the cited portion only discusses the VCP 10 system element in any detail, the Applicant assumes that the Office Action is drawing an analogy between an individual VAS of the plurality of VAS recited in **claim 16** and the VCP discussed in the cited portion of Filo. However, the cited portion of Filo does not disclose or suggest that the VCP of Filo provides wireless connectivity for a respective ones of the at least one VUE. The cited portion of Filo indicates that each of the participants are radio linked to one another as indicated by lightening bolt 20. It is respectfully submitted that

Filo does not disclose or suggest that a VAS, or even the VCP of Filo, provides wireless connectivity for those participants.

For at least the foregoing reasons, **claim 16** is not anticipated and is not obvious in light of Filo and Barnes.

In an apparent recognition that Filo does not disclose or suggest a plurality of VAS wherein responsibility for providing connectivity is handed off from a first respective VAS to a second respective VAS if the respective ones of the at least one VUE move out of a first geographic region served by the first respective VCS and into a geographic region that is served by the second VAS, the Office Action skips any discussion of this recited feature of **claim 16** with any reference to Filo and instead relies on Barnes, column 12, line 55 - column 13, line 1, for this disclosure. However, Barnes does not disclose or suggest virtual reality environments. Accordingly, Barnes does not disclose or suggest anything that could be construed to be analogous to a virtual reality environment access system or a plurality of virtual reality environment access systems. Even if the cited portion of Barnes discusses a mobile node which has roamed to a location D from a location F, it is respectfully submitted that Barnes does not disclose or suggest the handoff between virtual reality environment access systems recited in **claim 16**. It is respectfully submitted that any reading of Barnes as disclosing such subject matter could only have been motivated from information gleaned from the present application. Accordingly, the interpretation of Barnes and, therefore, the combination with Filo suggested by the Office Action, is based on impermissible hindsight reasoning.

For at least the foregoing additional reasons, **claim 16** is not anticipated and is not obvious in light of Filo and Barnes.

In support of the assertion that Filo discloses a virtual reality environment management entity (VEME) such as that recited in **claim 16**, the Office Action cites portions of column 2, 3 and 6 that have been discussed above. Even if the VCP of Filo is fairly construed to be analogous to a VEME of some sort (which is disputed), the VCP of Filo does not forward real time virtual reality data representative of an **actual physical environment**. The cited portion of column 2 indicates that the VCP of Filo exists as software and data on a network and that the VCP emulates "today's physical military command post." It is respectfully submitted that as used in Filo, the word --emulate-- means --imitate--. Accordingly, Filo does not disclose or suggest a VEME

that forwards real time virtual reality data representative of an actual physical environment. Additionally, column 6, lines 22-27, indicates that participants are radio linked to one another. The cited portion of column 6 does not disclose or suggest a VEME that forwards real time virtual reality data representative of an actual physical environment to at least one VUE associated with at least one user through wireless connectivity services of a respective virtual reality environment access system (VAS) currently serving the at least one VUE. Furthermore, column 6, lines 33-52, does not disclose or suggest that such wireless connectivity services are based on VUE or user location and/or mobile link information maintained by the VEME. It is respectfully submitted that the participants in the system of Filo are not disclosed as moving from location to location or in and out of areas served by respective virtual reality environment access systems (VAS). Even if the discussion of remotely located VCPs found at column 6, lines 33-52, is fairly construed as suggesting a plurality of VAS (which is disputed), the cited portion does not disclose or suggested that the participants physically move between those VCPs or that VCPs provide connectivity services therefor. Indeed, it is respectfully submitted that Filo teaches away from any significant movement (column 2, lines 49-54).

For at least the foregoing additional reasons, **claim 16** is not anticipated and is not obvious in light of Filo and Barnes.

Furthermore, it is respectfully submitted that there is no motivation to combine subject matter disclosed by Filo and subject matter disclosed by Barnes other than a motivation that could only have been gleaned from the present application. It is respectfully submitted that the motivation suggested by the Office Action, --in order to allow a mobile node to seamlessly roam between networks--, is specious. Roaming between networks is a goal allegedly satisfied by Barnes alone (column 12, lines 55-60). Accordingly, there is no motivation to combine Barnes with Filo in order to achieve this goal. Therefore, the Office has not met its burden of presenting a *prima facie* case of obviousness and the rejections of **claim 16** are based on impermissible hindsight reasoning.

Arguments similar to arguments submitted in support of **claims 1, 9** and **16** are submitted in support of **claim 17**. Column 2, lines 45-61, of Filo does not disclose or suggest virtual reality user equipment that captures and displays virtual reality data representing an actual physical environment associated with a first user. The virtual



command post of Filo exists as software and data on a network. The indication that the VCP emulates today's physical military command post does not disclose or suggest virtual reality environment user equipment that captures and displays virtual reality data representing an actual physical environment. Instead, it is respectfully submitted that the cited portion indicates that the VCP of Filo imitates a typical command post. Since Filo does not disclose or suggest capturing virtual reality data representative of an actual physical environment, column 6, lines 33-52, cannot disclose or suggest communicating such captured virtual reality data to intervening network elements including a second VAS, even if a remotely located VCP is considered to be analogous to a remotely located VAS (which is disputed). Column 6, lines 22-27, indicate that participants are in radio contact with each other. However, the cited portion does not disclose or suggest that captured data representing an actual physical environment associated with a first user is wirelessly transmitted to a first virtual reality environment access system. Column 7, lines 26-30, indicates that the executive user is further provided with a radio and modem that is linked to a wearable computer and that is effective to transmit updated changes in voice and position data via a network to personal computers of all the other users in attendance in the virtual environment. However, the cited portion of column 11 does not disclose or suggest that information is transmitted to a virtual reality access system. Moreover, the cited portion of column 7 does not disclose or suggest that virtual reality data regarding an actual physical environment is captured or transmitted.

For at least the foregoing additional reasons, **claim 17**, as well as **claims 18** and **19**, which depend therefrom, is not anticipated and is not obvious in light of Filo and Barnes.

With regard to the recitations in **claim 17** regarding accessing a relatively local and accessing a relatively remote VSD, arguments similar to those submitted in support of **claims 1** and **9** are submitted in support of **claim 17**.

With regard to the recitation of wirelessly transmitting the virtual reality data from the second VAS to the second user as authorized by the subscription information associated with the second user, wherein the second VAS and the second user are geographically remote from the first user, the Office Action directs the attention of the Applicant to column 6, lines 22-27; column 7, lines 26-30 and column 6, lines 10-52. However, the cited portions of column 6 and column 7 indicate that VCP participants

and a radio and modem linked to a wearable computer of the executive user transmit updated changes in voice and position data via a network to personal computers of all the other users in attendance in the virtual environment respectively. It is respectfully submitted that the cited portions of Filo do not disclose or suggest that virtual reality data is transmitted from a second virtual reality environment access system to a second user. Moreover, the cited portions do not disclose or suggest authorization via subscription information associated with the second user. Additionally, as indicated above, it is respectfully submitted that any virtual reality data transmitted in the system of Filo is not disclosed or suggested as containing virtual reality data representing an actual physical environment. Indeed, Filo teaches away from actual physical environments (column 2, lines 44-54).

For at least the foregoing additional reasons, **claim 17**, as well as **claims 18 and 19**, which depend therefrom, is not anticipated and is not obvious in light of Filo and Barnes.

Arguments similar to those submitted in support of **claims 1, 9, 16 and 17** are submitted in support of independent **claim 20**.

Additionally, it is noted that the Office Action does not even assert that Filo and/or Barnes discloses or suggests a virtual reality environment episode management entity that is operative to *inter alia*: maintain mobile links between participants and information sources associated with a virtual reality episode as recited in **claim 20**.

For at least the foregoing reasons, it is respectfully submitted that the Office has not met its burden of presenting a *prima facie* case of obviousness with regard to **claim 20**.

Further in regard to mobile links, it is noted that the Office Action does assert that Filo discloses relaying messages between a VUE and a VEME according to subscriber information and the mobile links. In support of this assertion, the Office Action cites column 6, lines 33-52. However, the cited portion is silent with regard to subscriber information and is silent with regard to mobile links. Clarification is respectfully requested.

For at least the foregoing additional reasons, **claim 20**, as well as **claims 21 and 22**, which depend therefrom, is not anticipated and is not obvious in light of Filo and Barnes.

Additionally, with regard to the recitation in **claim 20** that the VAS relays messages between the VUE and the VECE, the Office Action again cites column 6, lines 33-52. However it is respectfully submitted that the cited portion of column 6 does not disclose or suggest a VAS or that a VAS relays messages between a VUE and a VECE. Clarification including an identification of the elements of Filo that the Office considers to be analogous to a VAS and a VECE and a citation to discussion in Filo of of relaying messages between the element considered to be analogous to a VUE and the element considered to be analogous to the VECE is respectfully requested.

For at least the foregoing additional reasons, it is respectfully submitted that **claim 20**, as well as **claims 21** and **22**, which depend therefrom, is not anticipated and is not obvious in light of Filo and Barnes.

With regard to the recitation in **claim 20** related to the local and remote VSDs and home and visited VECEs, it is respectfully submitted that even if Barnes discloses network elements for providing mobile communications in a merged packet service and mobile internet protocol environment, Barnes, even in combination with Filo, does not disclose or suggest a virtual reality environment control entity that is operative to control virtual reality episodes associated with a subscriber or VUE by accessing local or remote virtual reality environment subscriber databases under the conditions recited in **claim 20**. It is respectfully submitted that any reading of Barnes, even in light of Filo, as disclosing such a VECE can only have been suggested from information gleaned from the present application and is accordingly based on impermissible hindsight.

For at least the foregoing additional reasons, **claim 20**, as well as **claims 21** and **22**, which depend therefrom, is not anticipated and is not obvious in light of Filo and Barnes.

Arguments similar to arguments submitted above are submitted in support of **claim 21**. The Office Action does not identify which elements of Filo the Office considers to be analogous to the VCE, the VSD and the VAS recited in **claim 21**. The cited portions of column 6 do not disclose or suggest subscriber databases or virtual reality environment subscriber databases. The cited portion of column 10, even in combination with Barnes, does not disclose or suggest a home or visited virtual reality environment control entity or a local or remote subscriber database. It is unclear which portion of column 6, lines 33-52, the Office believes discloses a VECE relaying messages between a VUE and a VEME. Indeed, it is unclear which of the elements of

the system of Filo the Office considers to be analogous to a VECE and which element of the system of Filo the Office considers to be analogous to a VEME. Column 6, lines 22-27, indicates that participants are in radio link contact with each other. However, the cited portion of column 6 does not disclose or suggest a virtual reality environment access system (VAS) providing wireless connectivity for at least one additional VUE. Indeed, it is unclear which element of the system of Filo the Office believes to be analogous to the virtual reality environment access system recited in **claim 21**.

For at least the foregoing additional reasons, **claim 21**, as well as **claim 22**, which depends therefrom, is not anticipated and is not obvious in light of Barnes taken alone or in any combination.

**Claim 22** recites a virtual reality environment gateway. The Office Action appears to stipulate that Filo does not disclose or suggest the subject matter of **claim 22** and relies on Barnes for this disclosure. However, even if Barnes discloses or suggests some form of gateway entity, Barnes does not disclose or suggest a virtual reality environment gateway entity such as that recited in **claim 22**. Barnes is not concerned with virtual reality. The system of Filo is unconcerned with mobility or gateways between different mobile network technologies. Accordingly, there is no motivation to incorporate aspects of mobile networks from Barnes in the system of Filo other than that which could be gleaned from the present application. Accordingly, **claim 22** is not anticipated and is not obvious in light of Filo and Barnes.

#### **Telephone Interview**

In the interests of advancing this application to issue the Applicant(s) respectfully request that the Examiner telephone the undersigned to discuss the foregoing or any suggestions that the Examiner may have to place the case in condition for allowance.

### **CONCLUSION**

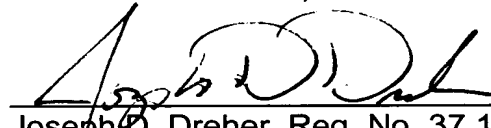
**Claims 1-22** remain in the application. For at least the foregoing reasons, the claims are in condition for allowance. Accordingly, an early indication thereof is respectfully requested.

Respectfully submitted,

FAY, SHARPE, FAGAN,  
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April 3, 2007

Date




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#### **CERTIFICATE OF MAILING**

Under 37 C.F.R. § 1.8, I certify that this Amendment is being

- ☒ deposited with the United States Postal Service as First Class mail, addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below.
- ☐ transmitted via facsimile in accordance with 37 C.F.R. § 1.8 on the date indicated below.
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